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WEST AFRICAN SNAILS OF THE FAMILY ACHATINIDAE IN THE UNITED STATES NATIONAL MUSEUM

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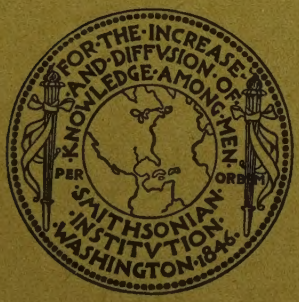

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WEST AFRICAN SNAILS OF THE FAMILY ACHATINIDAE IN THE UNITED STATES NATIONAL MUSEUM

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The land mollusks herein described were found in the course of a review of West African mollusks in the United States National Museum. The most interesting item perhaps is the snail described as *Achatina turbinata* Lea, the type specimen of which turns out to be a species of the genus *Pseudotrochus*. Though described over 90 years ago, it has not been illustrated hitherto, and never subsequently recognized. Later authors supposed Lea's shell to be a *Limicolaria*, and a very different species of that genus has been mistaken for it. Rolla P. Currie rediscovered this long-forgotten snail at Mount Coffee, Liberia.

Other snails now described were taken by the Collins-Garner French Congo expedition of 1918 in the Gaboon Colony, and by Rolla P. Currie, of the United States Bureau of Entomology, in Liberia. Mr. Currie, then aid in the division of insects of the National Museum, accompanied Dr. O. F. Cook, the well-known authority on Myriapoda, who visited Liberia as agent of the New York Colonization Society in the spring of 1897. He made valuable collections at Mount Coffee, on the St. Paul River about 7 miles inland from the Muhlenburg Mission and 25 to 30 miles from Monrovia.

Genus ARCHACHATINA Albers

ARCHACHATINA GABOONENSIS, new species

PLATE 1, FIGURES 3, 4

Type.—U.S.N.M. No. 336168, collected by Aschemeier, Collins-Garner French Congo expedition, at Agouma, Rem Nkami, Gaboon Colony, French Congo.

Description.—The shell is solid, oblong-conic, with broad, rounded summit. Surface glossy; bright apricot-yellow with bold stripes of chestnut-brown, which on the last whorl are widest in the middle, irregular or weakly zigzag, and taper or are forked near the suture; on the penultimate whorl they are generally more zigzag or oblique. The summit is dull reddish. Sculpture of fine, irregular striae cut

into minute granules by impressed spiral lines, after the smooth (worn) initial whorl; on the penultimate whorl this sculpture becomes weaker, and on the last whorl it is only faintly visible under the lens as spiral series of long, weak granules in some places. There is none of the microscopic granulation which covers the surface of *A. marginata.* In the last two and a half whorls the suture is rather broadly marginate, the margin more or less plicatulate. The ovate aperture is bluish within. Outer and basal margins of peristome acute, very slightly expanded. Columella white; much less concave than in *A. marginata.*

Length, 94 mm; diameter, 52.7 mm; aperture, 55 mm long; 6⅔ whorls.

Remarks.—This species is less inflated than *A. marginata*, without the minute granulation of the last whorl so characteristic of that species, and with more sharply contrasting dark streaks, which cover less of the surface. The columella, while somewhat variable as usual in achatinas, is less twisted spirally. It has some superficial resemblance to *Achatina weynsi* Dautz.

Six specimens were collected at the type locality. A much discolored egg, which fell out of one of them, has a minutely roughened surface and measures 12 by 16 mm.

Agouma,[1] where these shells were taken, is about 100 kilometers inland from Fernand Vas and the same distance south of Lambarene. It is somewhat higher than the latter, between 200 and 300 meters elevation, in forest, according to the French colonial atlas.

ARCHACHATINA GABOONENSIS LAMBARENENSIS, new variety

PLATE 2, FIGURE 3

A much larger form or race from Lambarene, on the Ogowe (Ogooue) River, Gaboon Colony, is in the collection of the Academy of Natural Sciences of Philadelphia, No. 159294, collected by Mrs. L. Russell. Length, 120 mm; diameter, 70 mm; 6¾ whorls. Other characters as in the type lot.

ARCHACHATINA SPECTACULUM, new species

PLATE 2, FIGURE 4

Specimens.—Type: U.S.N.M. No. 406386, received from J. Wilson from West Africa. Paratype: No. 20220, "Gambia," Totten.

Description.—The solid, ovate-conic shell is between olive-ocher and honey-yellow, with straight, widely spaced, brown and light brownish-olive streaks, the spire whitish to pale brown with darker brown irregular streaks; apex whitish. The whorls are rather

[1] "Ogouma" on the labels, but I presume Agouma was intended. I do not know the significance of "Rem Nkami."

weakly convex, less so than in *A. purpurea* or *A. ventricosa.* Suture with a rather weakly defined margination. Surface closely granulose, the granules in spiral lines and superposed on the irregular axial wrinkles, a little weaker below the periphery; on the early whorls similar to those of *A. purpurea.* The aperture is ovate, pale vinaceous-pink within, somewhat darker within the lip edge. Columella and parietal callus vinaceous, with a darker outer edge. Measurements are as follows:

Measurement	Type	Paratype
Length.....mm..	105	99
Diameter.....mm..	68.5	61.7
Length of aperture.....mm..	72.2	66.2
Number of whorls.....	7	6⅓

Remarks.—The shape is about that of *A. rhodostoma* (Philippi), but it differs from that by the well-developed granulation of the last whorl, as in *A. purpurea* and *A. ventricosa*, and by the longer aperture, over 68 per cent of the length of shell, while in *rhodostoma* the aperture occupies about 57 per cent and in *A. rhodostoma splendida* about 59.6 per cent. In *A. spectaculum* the aperture is distinctly narrower than in *A. rhodostoma*, *purpurea*, or *ventricosa.* The parietal callus has a dusky edge, not a lighter edge as in *A. rhodostoma*, in this respect resembling *A. purpurea.* The interior in *A. spectaculum* is decidedly paler than in *A. purpurea* and *A. ventricosa*, and the whorls are much less convex than in those species.

This species differs so much from others of the *purpurea* group known to this time [2] that it seems best to call attention to it, even though the locality is unknown. Its relations are with the species of that Liberian group, as it has the sculpture of *A. ventricosa* and much the shape of *A. rhodostoma.*

Genus PSEUDOTROCHUS H. and A. Adams

PSEUDOTROCHUS TURBINATUS (Lea)

PLATE 1, FIGURES 1, 2

Achatina turbinata LEA, Proc. Amer. Philos. Soc., vol. 2, p. 31, May 7, 1841.

Specimens.—Type: U.S.N.M. No. 116706, collected by Doctor Blanding in Liberia. No. 151005, collected by R. P. Currie at Mount Coffee, Liberia.

Description.—The shell is thin, ovate-conic, the outlines only slightly contracted below the summit. The last whorl is opaque white with widely spaced, irregular dark streaks and scattered spots, which are liver-brown on the back, chestnut on the front; the penultimate

[2] Man. Conch., vol. 17, pp. 113–116, 1905.

whorl with still lighter streaks on a grayish-white ground, earlier whorls uniform whitish. The first whorl is smooth, the rest with very fine, irregular, oblique striae decussated by closely engraved spiral lines; these are somewhat weaker on the last whorl, which is distinctly malleate on the back. The whorls are only moderately convex, the last angular at the periphery in front, the angle disappearing on the back. Suture shallow, narrowly marginate, and minutely, not very strongly, crenulate. The ovate, oblique aperture shows the external color markings. Lip thin, white, the basal margin rather deeply concave. Columella subvertical, faintly brownish, obliquely truncate anteriorly.

Length, 33 mm; diameter, 19.4 mm; aperture, 18 mm long; 5⅔ whorls.

Remarks.—Doctor Lea's first description of this species was from the specimen illustrated in Plate 1, Figures 1, 2, and redescribed above. He subsequently thought that this shell represented an immature stage of a much larger form, which he had from the same place and collector, and his second description [3] was from this larger form, which differs from the original type in size, shape, color, and number of whorls. Copies of Lea's two descriptions have been given in Manual of Conchology, vol. 16, p. 253, 1904. His opinion that the two shells were young and adult stages of one species was certainly erroneous. They are both adult and belong to appreciably different groups of species. I am describing Lea's second conception of *A. turbinata* as *Pseudotrochus leai.*

Lea did not figure his species, and his comparison with "*Achatina*" *flammata* led later authors to refer it to the genus *Limicolaria.*

Reeve's *Bulimus turbinatus*, which he doubtfully identified with Lea's species, is an entirely different West African *Limicolaria.*

P. turbinatus is very closely related to *P. mucidus* (Gould), described some years later, but *turbinatus* differs by its sparser markings and the subangular last whorl. Further collections are needed to determine whether there is intergradation; the small series in the collections of the Academy of Natural Sciences of Philadelphia and the National Museum do not show any intermediate stages.

PSEUDOTROCHUS LEAI, new species

PLATE 1, FIGURES 6, 7

Achatina turbinata LEA, Trans. Amer. Philos. Soc., vol. 9, p. 2, Apr. 5, 1844; repeated in Observations on the genus *Unio*, vol. 4, p. 2, 1848. (Not *A. turbinata* Lea, 1841.)

Type.—U.S.N.M. No. 406385, collected by Doctor Blanding in Liberia and received with the Lea collection.

[3] Trans. Amer. Philos. Soc., vol. 9, p. 2, 1844.

Description.—The shell is moderately solid, oblong-conic, with conspicuously mammillate summit. Last whorl honey-yellow with some chestnut suffusion and numerous oblique chestnut lines of varying intensity, also a few scattered dots. Penultimate whorl with broad, ill-defined, whitish and chestnut-brown stripes and some opaque white spots in the upper half; earlier whorls whitish. Surface shining, smoothish, with fine wrinkles of growth and a faint, shallow, and close microscopic spiral striation, only perceptible in some places. There are two conspicuous growth rests on the last whorl. The whorls are rather weakly convex, the last rounded peripherally, though the shell is apparently angular when young, as a blunt angulation of the penultimate whorl is exposed above the suture. Suture margined, the margin regularly crenulated. The aperture is moderately oblique, ovate, whitish with dark streaks within. Columella white, vertical, nearly straight, curving into the basal margin, not truncate.

Length, 69.2 mm; diameter, 32.7 mm; aperture, 31.5 mm long; 8 whorls.

Remarks.—This species has much in common with *P. torridus* (Gould), but the narrower contour and the difference in color pattern serve to differentiate them in the series now available.

PSEUDOTROCHUS COFFEAMONTIS, new species

PLATE 1, FIGURE 5

Type.—U.S.N.M. No. 151004, collected by Rolla P. Currie at Mount Coffee, Liberia, 1897.

Description.—The shell is thin, ovate, with mammillate summit, honey-yellow to old gold in color, with some narrow, inconspicuous, whitish streaks on the spire, the upper whorls of which are pale isabella color. Surface mat with slightly glossy patches where worn, the apex glossy. Under the lens fine engraved spiral lines are seen on postembryonic whorls of the spire and the upper part of the last whorl. The microscope shows a clothlike texture of crisscross scratches, especially well developed in the middle and basal parts of the last whorl and more or less obsolete in the upper part. The whorls are feebly convex, the last rounded peripherally. Suture superficial, a slight concavity below it, where the otherwise weak growth wrinkles are strengthened into short, recurved little folds. Aperture ovate, fleshy whitish inside. Columella very little thickened, slightly concave, obliquely subtruncate below. Parietal callus very thin, transparent.

Length, 55.9 mm; diameter, 30.5 mm; aperture, 30 mm long; 7½ whorls.

Remarks.—This species is related to *P. gouldii* (Reeve), which under the microscope shows a similar pattern of crisscross scratches; but in that species the shape is slenderer and the aperture smaller, less than half of the total length, while in our species it is decidedly more than half. It is a thinner shell than *P. torridus* (Gould) and quite different in the microscopic sculpture.

A note by the collector states that this snail is used for food.

There is a young shell (U.S.N.M. No. 151003), taken by the same collector at the same place, that measures: Length, 36.7 mm; diameter, 26 mm; 6 whorls; at this stage the periphery is rather strongly angular.

PSEUDOTROCHUS AURIPIGMENTUM MUSCARUM, new subspecies

PLATE 2, FIGURES 1, 2

Type.—U.S.N.M. No. 336169, collected by Aschemeier, Collins-Garner French Congo expedition, at Agouma, Rem Nkami, Gaboon Colony, French Congo.

Description.—The last whorl is cinnamon-buff, paler toward the suture and in a band below the angular periphery, an ill-defined darker band above it; sprinkled with chestnut dots; on the penultimate whorl there are some oblique dark smears and scattered opaque white spots in its upper half. Next earlier two whorls with short, dark flames in the upper half; apical whorls nearly white. Columella and parietal callus chestnut-brown.

Length, 56 mm; diameter, 29.3 mm; 7 whorls.

Remarks.—The locality of this race is farther south than that of *P. auripigmentum* or of any of its other races.

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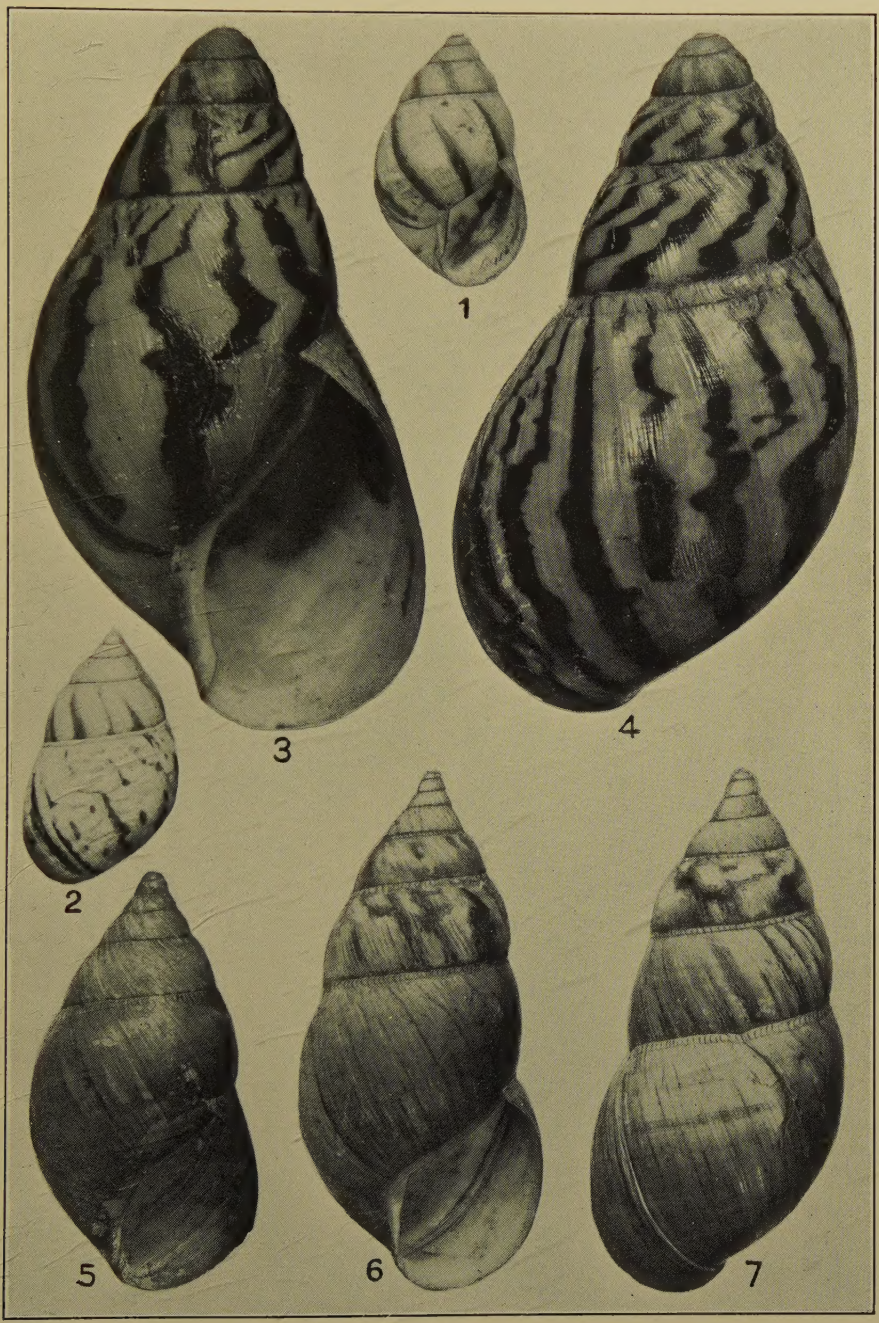
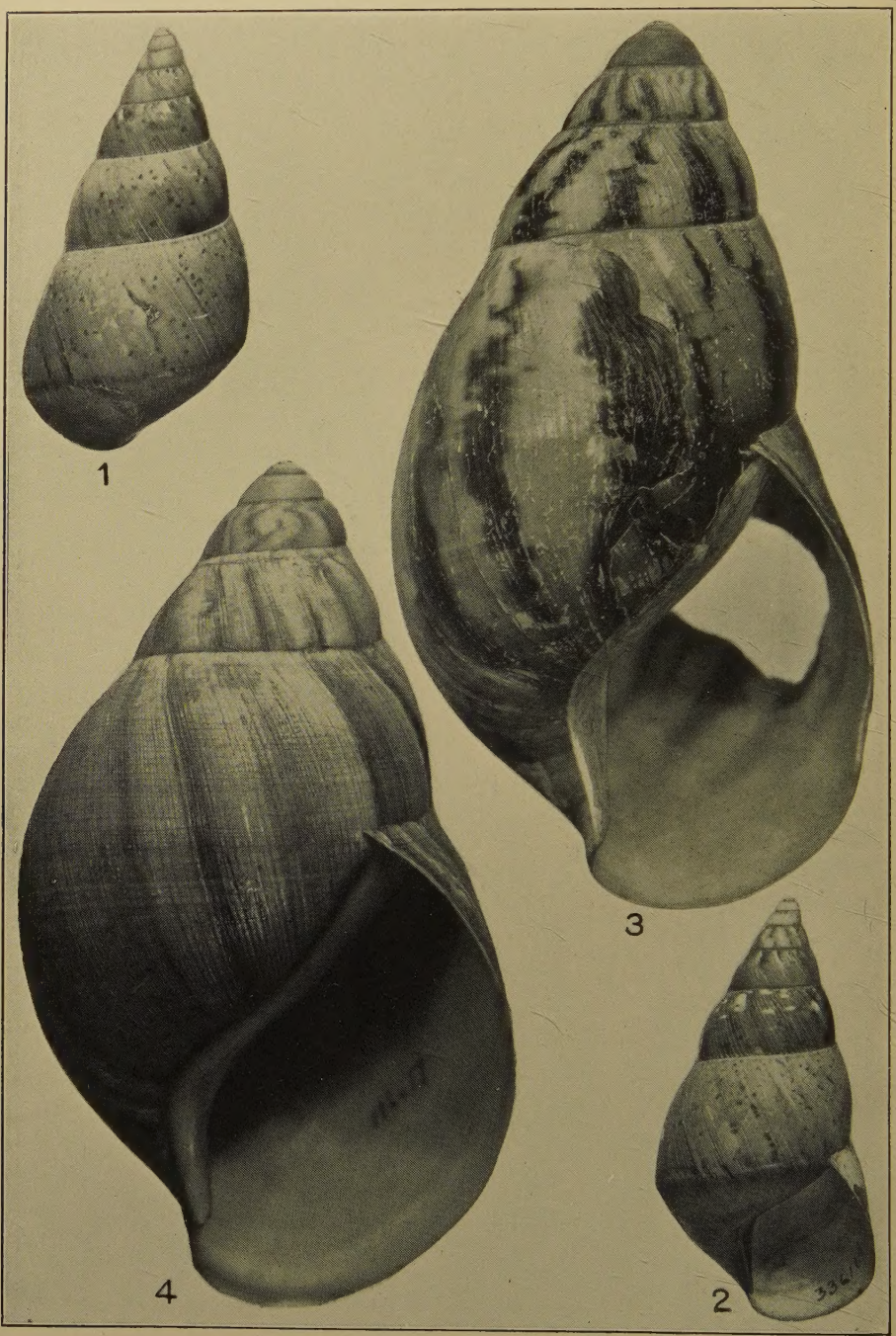


WEST AFRICAN SNAILS

1, 2, *Pseudotrochus turbinatus* (Lea): Face and back views of the type; 3, 4, *Archachatina gaboonensis*, new species: Face and back views of the type; 5, *Pseudotrochus coffeamontis*, new species: Face of the type; 6, 7, *P. leai*, new species: Face and back of the type.



WEST AFRICAN SNAILS

1, 2, *Pseudotrochus auripigmentum muscarum*, new subspecies: Back and face views of the type; 3, *Archachatina gaboonensis lambarenensis*, new variety: Face of the type; 4, *A. spectaculum*, new species: Face of the type.